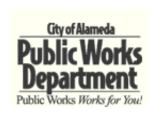


# Zero Waste Business Meeting March 12<sup>th</sup>, 2009





# Zero Waste, Sustainability, and the Triple Bottom Line

Presented to
Alameda Zero Waste Business Meeting
Presented by
Gary Liss, Gary Liss & Associates
916-652-7850, gary@garyliss.com
www.garyliss.com

### **Zero Waste**

- Redefines concept of "waste" in our society
- Goes beyond recycling
- Stimulates redesign of products and processes to eliminate waste, improve efficiency
- Conserves and recovers resources (vs. burning or burying them)

### The Zero Waste Economy

### Designing a Full-Cycle System—Upstream AND Downstream

Waste...

or Darn

Near

**Downstream** 

### **Design for the Environment, Not the Dump**

All products must be recoverable through reuse, recycling or composting

#### **Shifting Subsidies**

Stimulating green practices rather than favoring waste and pollution

#### **Changing the Rules**

Removing market barriers and inequities to support sustainable industry



#### Jobs, Jobs, Jobs

Redesign and recovery create more jobs than resource destruction



#### **Clean Production**

More resource efficient and recoverable, less toxic to workers, environment and consumers



#### **Retail Stores**

Opportunity for consumer education and product take-back



#### **Consumer Buying Power**

Creating market demand and a new manufacturing standard



#### **Producer Responsibility**

Manufacturers are part of the solution, taking back their own products or supporting recovery infrastructure



Community center for total recovery reuse, recycling and composting material exchange, and education

> © Copyright, Eco-Cycle 2005 www.ecocycle.org/zerowaste/zwsystem

### **Pillars of Zero Waste**

Upstream

Downstream

Green Businesses and Jobs

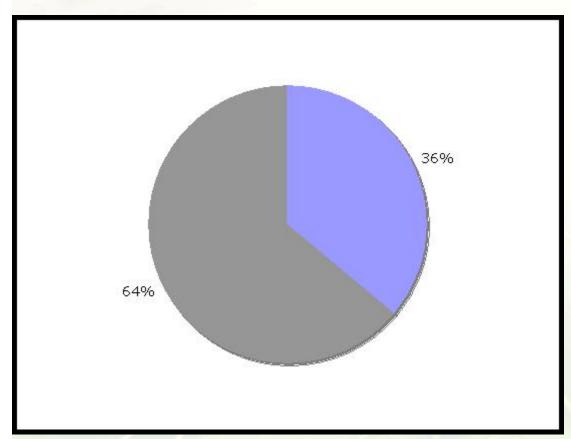
## **Upstream**

- Recognizes 71 Tons "Upstream" For Every Ton of MSW landfilled
- Reduce volume and toxicity of raw materials and manufactured products
- Rethink and redesign products and processes to reduce wasting and planned obsolescence
- Promote lower impact or reduced consumption lifestyles

## **Extended Producer Responsibility (EPR)**

- Goal: Shift product waste management from government and ratepayer funded to producers being responsible
- Encourages Redesign of Products and Processes that Increases Efficiencies
- Takeback of products and packaging is perceived as GREEN and results in Customer Loyalty, repeat customers, and free advertising

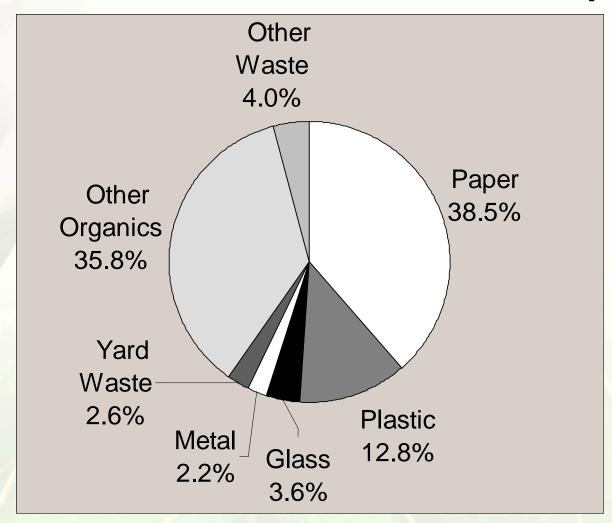
# **Typical Business Throughput Pie**



Blue = Output Related to Product

Grey = Output NOT Related to product

### **Alameda Commercial Waste Composition**



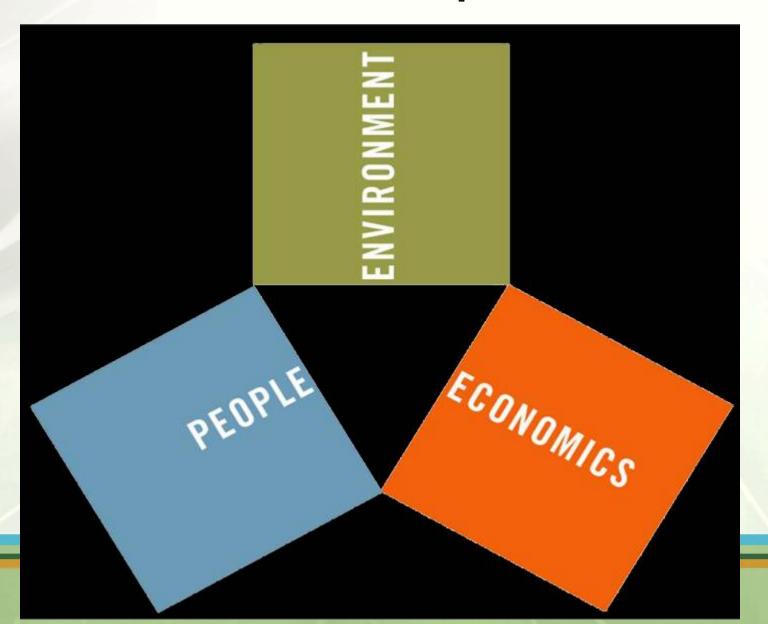
### **Downstream**

- Ensure the highest and best use of products and packaging at the end of their useful lives
- Reuse products and packaging, retaining their original form and function
- Recycle materials that are not reduced or reused
- Compost materials that are not recycled

### **Green Businesses and Jobs**

- Support, expand and attract green businesses and job opportunities, including Green Building
- Reserve sufficient land for Zero Waste infrastructure
- Buy green goods and services

## Zero Waste and the Triple Bottom Line



### Can we Afford Zero Waste?

- Decentralized approach
- Shifts costs and responsibility to producers, providing clearer choices for consumers
- Costs to decline over time for cities or ratepayers
- Businesses save \$ by:
  - Product & process Improvements
  - Eliminating waste
  - More reuse, recycling and composting

### **Ricoh Electronics**

Concepts in raising the level of Zero-Waste-to-Landfill Activities

\$\$ Savings

Practicing Sustainable Environmental Management

Economic recycle activities

Waste



- Reducing weight and size of waste
- Reducing the unit cost of waste recycle
- Turning waste into valuable materials
- Raising the value of valuable materials

### Environmental Preservation

Activities to Reduce Waste (5Rs)

- Refuse (avoid buying anything that may become waste)
- Reduce (reduce waste)

- Return (return what can be returned to suppliers)
- Reuse (reuse, if possible)
- Recycle (promote recycling)

# **Toyota**

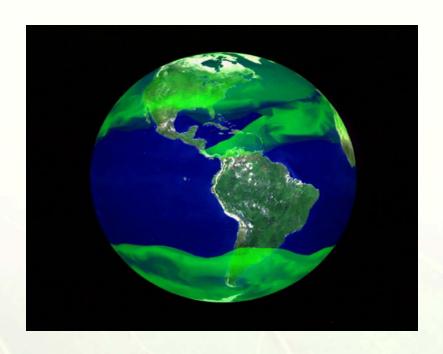
- 10 "Zero Waste" Plants (95% reduction of waste to landfill from 1999)
- 1 HQ and 3 Distribution Centers are "Zero Waste to Landfill"
- 8 Distribution Centers > 90%
   Recycling Rate

# **Toyota**

- \$1.3 million in net savings on waste management
- Returnable shipping modules saved \$5.3M in costs and 3.4M pounds of cardboard, 9.8M pounds of wood

### Is Zero Waste Attainable?

- Nature Is The Model
- Zero Waste, Or Darn Close
- Businesses Have Achieved over 90% Waste Diversion



Picture: Methane Earth; Credit: GISS, NASA

### The Link Between Waste Management and Greenhouse Gases

Greenhouse gases are emitted during the harvesting of trees, and the extraction and transport of raw materials.

#### **Extraction**



Waste prevention and recycling delay the need to extract some raw materials, lowering greenhouse gases emitted during extraction.

Manufacturing products releases greenhouse gases during processing and as energy is expended during product use.

#### Manufacturing



Waste prevention means more efficient resource use, and making products from recycled materials requires less energy. Both lower greenhouse gases emitted during manufacturing.

Burning some kinds of waste in an incinerator increases greenhouse gas emissions.

#### Combustion



Waste prevention and recycling reduce the amount of waste sent to incinerators, lowering the greenhouse gases emitted during combustion.

#### Increased GHG Emissions

Greenhouse gases are emitted as waste decomposes in landfills.

### Landfilling

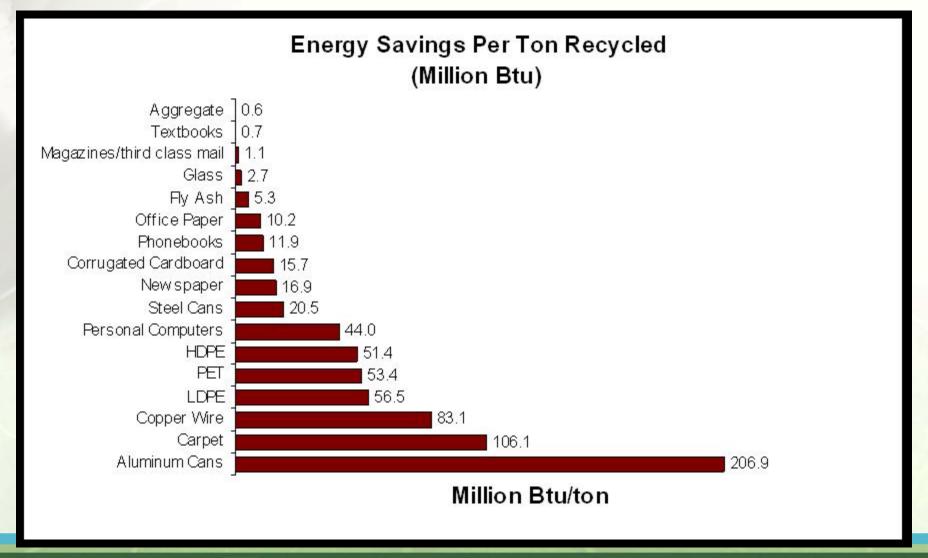


Waste prevention and recycling reduce the amount of waste sent to landfills, lowering the greenhouse gases emitted during decomposition.

Decreased GHG Emissions

Source: Henry Ferland U.S. EPA Slide: Judith Friedman Cal EPA

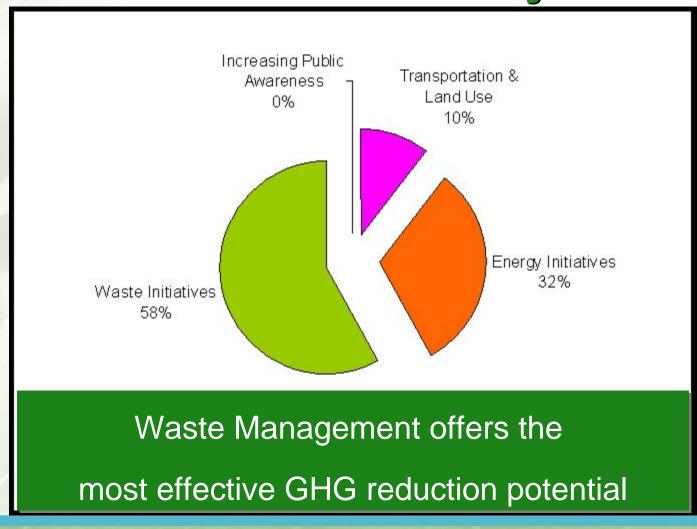
### **Energy Savings from Recycling**



Source: Henry Ferland U.S. EPA

Slide: Judith Friedman Cal EPA

# City of Alameda GHG Reduction Analysis



# Zero Waste Businesses are Leading the Way (>90% Waste Diversion)

- Anheuser-Busch, Fairfield, CA
- Apple Computer, Elk Grove, CA
- Epson (OR)
- Fetzer Vineyards
- Frankie's Bohemian Café, SF
- Greens Restaurant, SF
- Hewlett-Packard, Roseville, CA
- Mad River Brewery
- New Belgium Brewery
- NUMMI, Fremont, CA

- Pillsbury
- Playa Vista, LA, CA
- Ricoh Electronics
- San Diego Wild Animal Park
- Scoma's Restaurant, SF
- Toyota
- Vons-Safeway
- Xerox Corp
- Yost Printer, Monrovia, CA
- 2,800 Businesses in Japan

Source: www.grrn.org/zerowaste/articles/companies\_zw.html

## Why would a business DO this?\*

- ➤ Reducing Waste Saves Money \$\$\$
  - •Trash service is expensive!
  - •Trash takes up valuable 'real estate'
  - Wasted resources can be a commodity
- ➤ Reducing Waste is "Right Thing To Do"
  - EMS Corporate Policies may require this
  - Businesses gain political capital with investment and community groups by being "good" citizens

<sup>\*</sup> Margaret Bruce, Silicon Valley Manufacturing Group, Presentation to CRRA Annual Conference, Oakland, CA, July 16, 2002

# **Beyond Compliance**

- Manage Risks and Decrease Liabilities
- Avoid Penalties and Benefit from Incentives
- Marketing Edge ("Green" Business)
- Pressure from Shareholders and Consumers

# Key Policies & Programs for Zero Waste

- Know Your Waste
- Design it Out
- Help Local Business Be Green
- End Subsidies for Wasting
- Build Infrastructure Beyond Recycling

### **Know Your Waste**

- Conduct Waste Characterization Study
- Determine how and where materials are discarded
- Identify service opportunities

#### **Master Categories\***

- 1. Reusables
- 2. Paper
- 3. Plant Debris
- 4. Food Scraps
- 5. Wood
- 6. Ceramics (C&D)
- 7. Soils
- 8. Metals
- 9. Glass
- 10. Polymers
- 11. Textiles
- 12. Chemicals

\*Urban Ore developed these.

# **Design It Out**

- Incentives adopted to eliminate wasting
- Producers and retailers take back products and packaging (Extended Producer Responsibility)
- Products designed for:
  - Durability
  - Reusability
  - Recyclability
  - Compostability

# Help Local Business Be Green

- Adopt Zero Waste goals and plans (including Zero Waste Business Principles\*)
- Source separate designated materials
- Reuse and recycle construction and demolition debris
- Buy green products, rent space in green buildings and obtain green services
- Ban non-recyclable products

# **End Subsidies for Wasting**

- Local government should adopt ZW policies and economic incentives in:
  - Garbage rate structures
  - Permits and zoning
  - Contracts and franchises
  - General Plans
  - Ordinances
- Support state and federal policies to enhance Zero Waste

### **Incentives**

- Change Economics So What Was Marginal Is Now Economic
- Pay For What You Want:
   Waste Prevention, Reuse, Recycling & Composting
- Don't Pay For Wasting (Or Much Less)
- Recognize Waste As Symptom Of Inefficiency
- Harness Forces Of Marketplace To Achieve Goals

# Plan for and Build Zero Waste Infrastructure

- Build on Existing Reuse, Recycling and Composting Businesses and Nonprofits
- Preserve Enough Industrial Land for Key Zero Waste Facilities
  - Reusables
  - Food Scraps
  - C&D Materials
- Offer incentives for services needed
- Resource Recovery Parks

